RICHARDSON (M.H.)

# THREE CASES OF LATERAL ANASTOMOSIS BY MEANS OF THE MURPHY BUTTON

BY

MAURICE H. RICHARDSON, M.D.

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# THREE CASES OF LATERAL ANASTOMOSIS BY MEANS OF THE MURPHY BUTTON.[1]

I. Cancerous Stricture of Colon at Splenic Flexure; Anastomosis between Cæcum and Sigmoid Flexure; Recovery; Button Retained.

II. Cancerous Stricture of the Pylorus; Dilatation of the Stomach; Gastro-Enterostomy; Gangrene of Stomach Wall about Button; Extravasation; General Peritonitis; Death; Autopsy.

III. Recurrence of Obstruction in Case I; Second Anastomosis between Cæcum and Sigmoid Flexure; Recovery; Button Retained; Death in Six Months from Original Disease Complicated by Acute Internal Strangulation; Autopsy.

BY MAURICE H. RICHARDSON, M.D.

The valuable principle of lateral anastomosis has added so materially to our operative resources in many intestinal conditions, that improvements in the technique of applying this principle are welcome. It is true that mechanical aids permit great rapidity in the performance of lateral anastomosis. It remains for additional experience to show whether rapidity is not gained at the expense of safety.

For the chief methods of lateral anastomosis by mechanical aid — Senn's plates, Abbe's rings, Brokaw's rings, and Murphy's button — is claimed the advantage of a rapid operation and a secure joint; the principal fault, common to all devices, is an anastomotic opening too small for permanence.

The present communication is devoted to the consideration of but one of the above methods — the use of the Murphy button. The value of the other devices has been repeatedly demonstrated, and, though

[1] Read before the Surgical Section of the Suffolk District Medica Society, November 6, 1895.

many have abandoned entirely the use of mechanical aids to anastomosis (notably Abbe and Brokaw themselves), they undoubtedly will remain a permanent and valuable addition to our technical resources.

The Murphy button, much more rapidly applied than any of the other devices, has the disadvantage of being metallic, and incapable of absorption. The anastomotic opening, necessarily small, is liable to contract. Moreover, before it is detached, the button itself may become clogged; it may become impacted in its passage towards the anus; in either case an acute obstruction may result. Furthermore, the circle of contact may give way and permit a fatal extravasation. These disadvantages, some of which, it is true, are common to all mechanical methods, seem conspicuous in the use of the Murphy button.

On the other hand, the device is a beautiful and ingenious mechanism; the rapidity with which it can be applied, astonishing, and the joint simply perfect. If additional experience or improvement can obviate the manifest disadvantages of the method, I have no doubt that its place in surgical technique will be an honorable and conspicuous one.

In showing me an ingenious and complicated machine, an inventor remarked that it was useful only in the hands of its friends; its opponents had always failed to see its virtues. The same remark, perhaps, is applicable to the Murphy button. An unprejudiced observer fairly might say that the device and the methods of its application are too complicated for general use, and that the brilliant results claimed by the Murphy button are not borne out by general experience; on the other hand, he probably would admit, that the disadvantages and the dangers of the method have been unduly exaggerated. The truth doubtless lies between these extremes. Undoubtedly better results are obtained by

those who are enthusiastic in favor of the button and who are familiar with the proper technique of its application, than by those who apply the method doubtingly, and possibly unskilfully.

It is a fair objection to a method, as to my friend's machine, that it is complicated, and that it requires long practice to become expert in its use. To be of general utility, a device must be simply and easily applied. Moreover, even if unskilfully used, it ought not to be easily productive of harm.

For example, if the safety of the procedure is fatally compromised by bringing too great a pressure upon the intestine between the edges of the button, the method of Murphy must be admitted to be defective and dangerous. The Murphy button itself can hardly be called complicated, for its mechanism is simple and its principles easily applied. Yet in order not to compromise the safety of the whole procedure, its application requires the most careful attention to detail.

The scope of the paper does not include a consideration of the comparative merits of the different methods of anastomosis. When the patient's condition justifies a deliberate technique, I prefer to dispense with all appliances, excepting a needle and thread. The joint is satisfactory and the opening may be made as long as is thought necessary. When speed is essential the Murphy button is brilliantly successful in its application.

In the report of the following cases I wish briefly to contribute my experience with the Murphy button.

Case I. Miss C. A. S., bookkeeper, age forty-seven, a patient of Dr. McCollester, of Waltham, and Dr. Miller, of Leominster, was examined by me Thursday, August 16, 1894. Though subject to constipation, she had always been well. In June, without apparent

cause, she fell unconscious in the street. In the latter part of July she consulted Dr. McCollester for constipation. On Wednesday, August 1st, she was seized with excruciating pain in the abdomen. This attack was followed by a constipation which was overcome with difficulty. The pain required hypodermic injections of morphine. Though she did not feel able to continue her work, she recovered in two or three days. On Thursday, August 9th, after eating heartily of corn, beans and blueberries, she had a second attack of pain and constipation, which resulted in complete obstruction. By Tuesday the coils of intestine, knotted in paroxysmal contractions, could be seen through the abdominal wall, being especially conspicuous in the right iliac fossa, where a tense and resistant loop could be felt. Vomiting was frequent and persistent. On Wednesday she was in great pain, which she referred to the epigastrium. All efforts to move the bowels by enemas and medicines were unsuccessful. The pulse was 70, the temperature 97.8°. Physical examination was negative. The abdomen was soft, though somewhat distended. The uterus was irregular and enlarged. Rectal examination was negative. A diagnosis of acute obstruction of uncertain cause and situation was made, and a median exploration advised.

The abdomen was opened immediately in the median line, between the umbilicus and the pubes. The cæcum was found excessively distended, the sigmoid flexure collapsed. Manual exploration showed an indefinite mass in the region of the splenic flexure of the colon, probably a cancerous stricture of the colon at this point. The patient's condition was so alarming that no radical measures seemed justifiable. The cæcum and sigmoid flexure were brought into approximation and by means of the Murphy button a lateral anastomosis was made. The moment the cæcum was incised

for the insertion of one-half the button, there was a burst of gas and liquid fæces which flooded the whole field of operation, running among the intestinal coils and into the pelvis. The two halves of the button were applied so unskilfully that the joint was not tight. This defect was remedied after a fashion by the application of a few sutures. Nevertheless, I did not think it safe to close the abdominal wound without gauze drainage. In spite of the defects in the technique of this operation, and notwithstanding the serious condition of the patient, a good recovery followed. For two weeks there was a slight fæcal discharge through the wound. The bowels began to move freely and satisfactorily. In the course of a few weeks she was able to be up and to attend to her duties. Though carefully sought, the button never made its appearance in the fæces.

This was my first experience with the Murphy button. Though the case was a successful one, the method was so imperfectly applied that the result might have been seriously compromised. Had a fatal result followed, the want of success should have been laid not to the method, but to the inexperience and consequent lack of skill in its application. Doubtless many failures in the first trials of the Murphy button could justly be explained in the same way.

In the course of a few months Miss S. began to have pain and constipation, which persisted until obstruction became complete. She was sent to the Massachusetts General Hospital, where she was admitted to my service February 11, 1895 (see Case III).

Case II. C. S., age sixty three, furniture-polisher, entered my service from the medical wards February 22, 1895. The history showed that gastric disturbances had lasted nine months. There was a perceptible nodule at the pylorus, with dilatation and

hypertrophy of the stomach. The chief symptom was excessive and uncontrollable vomiting. The vomitus was free from blood. The patient's general condition was one of extreme exhaustion from starvation. The original disease evidently was too limited to cause so excessive an emaciation and weakness. For the purpose of ascertaining the situation and extent of the disease, and of performing either a radical or a palliative operation, exploration was advised. Preparations therefore were made for a pylorectomy or gastro-enterostomy.

A median incision, four inches in length, was made February 26th, between the umbilicus and ensiform cartilage. Through this opening the stomach and transverse colon were delivered with ease. The jejunum was next exposed below the transverse colon, and the anastomosis made between it and the posterior wall of the stomach. The joint seemed perfect. The operation lasted about five minutes, and in every way was satisfactory. The patient did very well for two days. On the third he began to fail, and six days after the operation, death took place, with symptoms of peritonitis.

At the autopsy the ring of gastric mucous membrane, compressed by the button, was necrotic; the gangrenous process, moreover, had extended into the stomach wall. The gastric contents had escaped and caused a fatal peritonitis.

Case III. Miss C. A. S., the patient of Case I, began to have symptoms of renewed obstruction in January. The movements were difficult and infrequent. The rectum contained numerous scybalæ about one-third of an inch in diameter which necessitated at times manual relief. The symptoms of obstruction were mild, and were supposed to be due to a narrowing rather than to a complete closure of the anas-

tomotic opening. The abdomen was soft and not especially distended. On deep palpation, no masses could be felt. Rectal examination was negative.

The abdomen was opened through the scar of the first incision, under which the intestines were found firmly and extensively adherent not only to the scar itself, but to each other. The coils were separated sufficiently to explore the upper portion of the abdominal cavity and the region of the anastomosis. Neither the button nor the original disease, which had been located in the splenic flexure of the colon, could be felt.

The cæcum was moderately distended; the sigmoid flexure collapsed. No sign of the anastomosis was found, and communication was supposed no longer to exist. The coils through which the anastomosis had been made were not separated, however, and a small communication might have escaped notice.

A second anastomosis was made near the site of the first. This time the operation was satisfactory and the joint perfect. Except at the lower angle, where a small piece of gauze was left for possible extravasation, the abdominal wound was immediately closed.

Prompt recovery followed this operation. The gauze wick was removed in two days. Within two weeks the wound became solid. Aided by cascara sagrada, the bowels moved freely and regularly. The patient, entirely relieved of her obstructive symptoms, was discharged March 20th (one month). The button never appeared.

The patient remained perfectly well until July 9, 1895, when Dr. R. W. Greene, of Worcester, was called to see her for intense pain in the abdomen with nausea, distension and increased peristalsis. The paroxysms of peristalsis could be seen through the abdominal wall to the right of the navel. Morphine with salines

and castor oil produced a fair dejection the next day. The patient was comparatively comfortable until July 26th, when a similar, though more severe crisis arose. From this she recovered. On August 9th, while dressing for a drive, she was taken with intense pain just above the umbilicus, followed by vomiting, distention and collapse. She died August 15th.

At the autopsy, Dr. F. H. Baker, of Worcester, found both buttons free in the transverse colon. Both anastomoses were still patent. The report of the autopsy in detail, kindly sent me by Dr. Baker, is as follows:

"Rigor mortis present: body markedly emaciated and cachectic. Abdomen moderately distended and everywhere tympanitic. There is a puckered linear cicatrix extending downward from the umbilicus fifteen centimetres in the median line. On opening the abdomen the cavity is free from fluid with the intestines bound firmly together and to the abdominal wall throughout the length of the cicatrix. The ascending and transverse colons are enormously distended with gas, and contain a slight amount of soft, light-colored fæces.

"The cause of this dilatation is a constriction at the splenic flexure, measuring two centimetres in length, and one centimetre in thickness, which narrows the lumen of the colon to less than the size of a lead-pencil. This tumor mass is flat, very dense, with its inner surface irregular and ulcerated. Lying free in the transverse colon are two Murphy buttons, each containing a piece of shrivelled intestine.

"Below the constriction the descending colon is of normal calibre, and at the sigmoid flexure has been drawn over the cæcum and the two united by two lateral anastomoses. The openings between them are nearly round, measuring fourteen millimetres in diameter, the intestines being firmly united without leakage.

"The small intestines form an almost inseparable mass on account of old peritoneal adhesions. About midway between the stomach and cæcum is found a strangulated, gangrenous loop of intestine, seventeen centimetres in

length, bound firmly down by a fibrous band causing also a thrombosis of the mesenteric vessels, one of which had ruptured, and on account of the leakage there was a partly clotted mass of blood beneath this loop. The amount of escaped blood being four to six ounces.

"The mesenteric glands are enlarged, one of them being the size of a small walnut. The pelvic organs, too, are matted together by old adhesions. The uterus is one-third larger than normal, and in its walls are several small myomata. Appendages normal. Liver is of normal size, showing a mild degree of fatty degeneration. Spleen and kidneys normal.

"*Anatomical Diagnosis.* — Cancerous stricture of colon at the splenic flexure. A chronic peritonitis. Gangrene of small intestine with rupture of branch of the superior mesenteric artery. Myomata of uterus.

"*Microscopic Examination.* — The growth at the splenic flexure consists, for the most part, of a proliferation of glandular tubules which are lined with cylindrical epithelium. The fibrous stroma is scanty. This proliferation extends, causing a loss of normal structure, into the submucosa and the muscular coats, which are considerably thickened. In places there are solid masses of irregular shaped epithelial cells with here and there areas of small, round-celled infiltrations. A section of one of the mesenteric glands shows a cancerous infiltration having the same general type of epithelium as the mass in the intestine."

The point most interesting to me in this case was the patency and size of the first anastomosis. Though twice as old as the second it was fully as large. The obstructive symptoms which seemed to demand the second operation were urgent. Constipation was complete. At the second operation were observed numerous small scybalæ about as large as the anastomotic openings found at the autopsy. The obstruction may have been caused by the impaction of one of these hard masses. The retention of the buttons in the colon gave rise to no symptoms whatsoever. In making an

artificial anus for cancer of the sigmoid flexure I once opened the head of the cæcum. The patient lived for a year in comparative comfort. At the autopsy we found in the colon enormous fæcal masses which had caused neither pain nor discomfort.[2] The retention of a Murphy button would of itself seem of little consequence.

In an anastomosis between such distant coils as the cæcum and the sigmoid flexure the button seems quite as likely to pass one way as the other. In case it is retained in the loop above the disease, little or no harm need be anticipated. Lodged below the point of obstruction the button cannot but prove a menace to life.

[2] Boston Medical and Surgical Journal, March 2 and 9, 1893.